Systems Approach to Quality Improvement: An Aviation Success Story

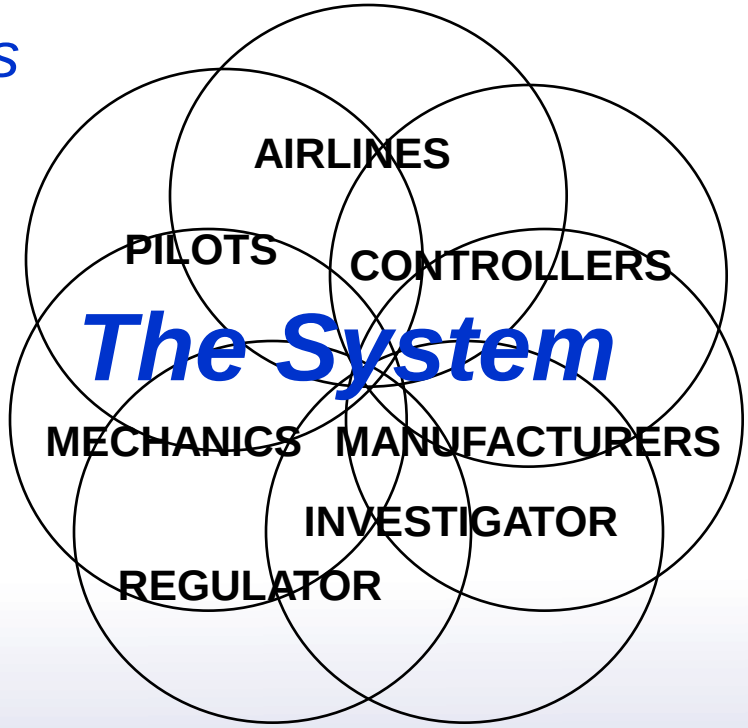
Christopher A. Hart
Vice Chairman

Outline

- The Challenge
- Aviation Success: Collaboration
- Suggested Beta Test

The Challenge: Complex Systems

- System *interdependencies*
  - Large, complex, interactive system of subsystems
  - Often tightly coupled
  - Hi-tech components
  - Continuous innovation
  - Ongoing evolution
- Mishaps probably result from *unwanted and often unforeseen interactions between the subsystems*



The Solution: System Think

Understanding how a change in one subsystem of a complex system may affect other subsystems within that system

"System Think" via Collaboration

Bring all parts of a complex system together to collaboratively

- Identify potential issues
- *PRIORITIZE* the issues
- Develop solutions for the prioritized issues
- Evaluate whether the solutions are
  - Accomplishing the desired result, and
  - Not creating unintended consequences

In aviation: CAST (Commercial Aviation Safety Team)

Aviation Collaboration Success Story

65% Decrease in Fatal Accident Rate, 1997 - 2007

largely because of

System Think

fueled by

Proactive Safety Information Programs

P.S. Improved not only safety, but productivity, too!

Moral of the Story

Anyone who is

involved in the problem

should be

involved in the solution

Challenges of Collaboration

- Human nature: "I'm doing great . . . *the problem is everyone else"*
- Participants may have competing interests, e.g.,
  - Labor/management issues
  - May be potential co-defendants
- Regulator probably not welcome
- Not a democracy
  - Regulator must regulate
- Process is voluntary, but all must be willing, *in their enlightened self-interest,* to *think out of their stovepipe* and *think more broadly of the entire System and how to improve it*

TRUST

Suggestion: Beta Test

- Common starting point: *Everyone wants to improve the system*
- Starting with that point of agreement, focus on troubling trend of high-frequency, low-consequence events (rather than low-frequency, high-consequence individual events)
  - Begin with longstanding problem that resists remedies
  - If trend is longstanding, problem probably results from defective systems and processes rather than bad people (which is why punishment is probably not helpful)
  - Participants will engage eagerly in a beta test because it is focused on process improvement rather than punishment
- Suggest seeking beta test volunteers who are willing to try a voluntary collaborative effort in pursuit of this shared objective of improving the system

Thank You

Questions?